APPENDIX C

DOE Facility at Oak Ridge Tennessee
OSHA Safety and Health Program Evaluation
Oak Ridge National Laboratory (ORNL)
Executive Summary

An evaluation of the safety and health program at the Department of Energy's (DOE) Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee was conducted on August 12 and 13, 1998 as part of the Oak Ridge Pilot Project established between the DOE and the Occupational Safety and Health Administration (OSHA). The Pilot Project was developed to help the DOE and OSHA determine the feasibility of DOE's desire to move towards external regulation of its operations for occupational safety and health and give responsibility for these operations to OSHA. The specific purpose of this safety and health program evaluation was to meet objective number two of the Oak Ridge Pilot Project: "To assess the effectiveness of DOE safety and health programs, including contractors and subcontractors, and the impact these programs would have on OSHA enforcement activities at DOE sites."

The OSHA team conducting this facet of the Pilot Project consisted of :
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The evaluation was conducted using the general model of an OSHA Voluntary Protection Program (VPP) pre-approval onsite review. This report is written following a modified VPP format with additional attachments. Due to limited time and resources available, a more focused approach than would be in a regular VPP onsite review was used.

Factors addressed in assessing the site's safety and health programs, that mirror the elements of the VPP, are: OSHA 200 Log Recordkeeping, Management Leadership, Employee Involvement, Worksite Analysis, Contractor Program, Hazard Prevention and Control, Medical Program, and Safety and Health Training. The information and conclusions contained in this report are based on interviews with employees and management, records review, and a review of the sites written programs. Due to time constraints, a tour of the worksite was limited. Therefore, the worksite analysis portion of this evaluation relied heavily on the simulated OSHA inspections that were ongoing.

The Oak Ridge National Laboratory is part of the Department of Energy's facility that is engaged in conducting basic and applied research and development to a variety of energy resources projects. Some construction and waste remediation is also on-going at the site. Thus the main safety and health hazards at the site include those of general construction, radiation, laboratory work, and facility maintenance.

The current Management and Operation contractor is Lockheed-Martin Energy Research Corporation. There are approximately 4600 to 4700 Lockheed-Martin employees and several subcontractors at the site. Bargaining unit employees are represented by the Atomic Trades and Labor Council which provides three full time safety and health representatives to the site. The site is appropriately classified in standard industrial classification (SIC) code 8733, non-commercial research.

The current three- year combined injury/illness incidence rate (IIR) and lost or restricted workday rate (LWDI) for the site for the period of 1996 to 1998 (year to date) are 4.54 and 1.82 , respectively. These rates are 68 percent and 82 percent above the most recently published BLS rates for SIC 8733 . It should be noted that sub contractors rates were not included in these calculations.

Overall, site management has a good attitude towards safety and health. Management was very helpful in organizing the team's activities. The Department of Energy employees responsible for safety and health oversight at ORNL were extremely helpful to the OSHA Evaluation Team. Lockheed Martin Energy Research Corporation's management system is very well organized and includes safety and health responsibilities.

The safety and health program at ORNL is very well operated and contained adequate personnel however, due to the high injury and illness rates, deficiencies in the specific elements of the safety and health program, and type and nature of hazards found during the OSHA simulated inspections, the Department of Energy's Oak Ridge National Laboratory (ORNL) would not meet the requirements of OSHA's Voluntary Protection Program at this time. This report contains a number of suggestions that could move the site closer to that goal.

OSHA 200 LOG RECORDKEEPING

Year	Work Hours	Injury and Illness Incidence Cases	Total Lost Workday cases	Injury and Illness Incidence Rate	Lost Workday Rate
1996	10,485,235	239	84	4.56	1.60
1997	9,752,405	202	88	4.14	1.80
1998 YTD	5,191,484	128	54	4.93	2.08
3 year totals and rates 1996-1998 (to 4/1/98)	25,429,124	569	226	4.54	1.82
1996 BLS Rates for SIC 8733				2.7	1.0
Percent above BLS rate				***68%***	***82%***

As can be seen from the chart above, the three-year combined injury and illness incidence rate (IIR) and lost or restricted workday rates (LWDIR) are 4.54 and 1.82, respectively. These rates are 68 percent and 82 percent above the industry average for SIC code 8733. The injury and illness data was obtained by reviewing the OSHA 200 logs, worker's compensation first reports of injury, employee medical files, first aid logs and reports, and medical incident reports from the occupational health care program. Employees who were interviewed indicated knowledge of the OSHA logs. The information they provided supported the data on the log.

The recordkeeping system for ORNL is managed by a Lockheed-Martin employee. This employee has been responsible for recordkeeping at the facility for many years. She is very knowledgeable about OSHA's Recordkeeping Guidelines for Occupational Injuries and Illnesses. The record keeper relies on information (both written and oral) from the on-site occupational health nurse, the OSHA guidelines and discussions with DOE representatives when deciding whether a case is recordable.

The ORNL record keeper takes no responsibility for accuracy of subcontractor recordkeeping systems. The record keeper receives a copy of the subcontractor log and then forwards to the appropriate DOE office. The prime contractor, Lockheed-Martin Energy Systems, does not audit the logs or vouch for their accuracy. According to conversations with a DOE representative, this is in opposition to DOE contract requirements stating that a prime contractor must assure that subcontractors are in compliance with OSHA recordkeeping rules.

DOE uses performance-based contracts which vary among contractors, but may include injury and illness performance criteria. Subcontractors' injury and illness history is taken into account during the pre-qualifying stages. The OSHA Team cautions the use of monetary incentive awards that are linked to reductions in injury and illness rates as this may induce under-reporting. At this site, however, this does not seem to have an effect on the way injuries and illnesses are recorded. The ORNL recordkeeping system is well-documented and in accordance with all regulations. It is a model system with the exception of oversight for the subcontractor recordkeeping.

Recommendations:

1) OSHA's VPP requires the prime contractor to track the recordkeeping of the subcontractors. To meet the levels of the VPP program and the DOE requirements, Lockheed-Martin Energy Systems should pick up an oversight role for their subcontractor's recordkeeping systems and should institute an audit program that assures the subcontractor is in compliance with OSHA recordkeeping rules.

SAFETY AND HEALTH PROGRAM

Management Leadership and Employee Involvement

Management Commitment/Top Management Leadership

Lockheed Martin Energy Research Corporations' Oak Ridge Management and Integration Organization is very well organized. It includes a Laboratory Director, a Deputy Laboratory Director, and six Associate Directors. One of the Associate Directors is responsible for Operations, Environment, Safety , and Health (OESH). This organization includes a variety of offices responsible for safety, health and environmental protection.

Clear goals for safety and health have been established and communicated. Lockheed Martin Energy Research Corporations states their goals and overall policy for safety and health in their *Environment, Safety , and Health Management Plan*. The goal statement basically states that "ORNL is committed to excellence in all activities and to cost-effective operation in compliance with all applicable environment, safety, and health (ES&H) laws and regulations." Specific goals are defined in the DOE Strategic Plan. Performance measures and self- assessments have been developed and utilized to ensure the goals are being met. In general, employees understood the basic goal and many indicated that "safety comes first".

Under DOE contract specifications , Lockheed Martin Energy Resources has begun to implement an Integrated Safety Management System (ISMS). In general, the ISMS somewhat mirrors the elements of OSHA's Voluntary Protection Program. It includes five management functions and seven guiding principles that encompass the elements of VPP, however, ISMS main goal is to include safety and health into the work planning, with the focus on accomplishing the work. This

is different than VPP in that VPP places more emphasis on safety and health management systems first. If those systems are in place the work automatically gets accomplished while ensuring employee protection. ISMS in general, is lacking in the area of Employee Involvement. Specific weaknesses are described in the *Employee Involvement* section of this report.

At the ORNL site level, top management clearly shows their commitment to safety and health. This was exemplified by top managers taking the time to attend safety committee meetings, listen to employees' concerns, and meet with the OSHA evaluation team. Employees perceived that management is committed to safety and health however, some indicated that communication is lacking. The goals and objectives for safety and health are mainly communicated through division safety officers and supervisors and to hourly employees through safety committees and union representatives.

Planning/Authority and Resource

Planning for safety and health is integrated with the overall management planning process, which is described in the *Environment, Safety, and Health Management Plan for the Oak Ridge National Laboratory*. The daily safety and health planning is carried out mainly through line management and the Safety Health and Evaluation Teams (SHEST).

The resources available for safety and health at ORNL vary. The Office of Safety and Health Protection is very well staffed with certified industrial hygienists, safety professionals and subject matter experts. The organization has embedded safety and health professionals into each division. This approach is effective in that each division has a specific resource to contact for safety and health concerns. Training is being "decentralized" with promotion of better use of to the subject matter experts in delivery. This approach will also improve communication and interaction with employees while improving the quality of the training.

Overall, the system for identifying hazards at ORNL is excellent. Everyone is aware of the hazards they may be exposed to during work. Hazard abatement methods, however require adequate funding which is not always available. Many budgetary requests need approval from DOE, and a risk-based budgeting priority is therefore utilized. This is of concern, as physical OSHA type violations may not receive as high a priority as bigger projects and therefore, may remain uncorrected for a certain period of time.

Line Accountability

Managers, supervisors, and employees are held accountable for meeting their responsibilities for workplace safety and health on their annual Development, Planning, and Performance Review (DPPR). This was indicated during employee and management interviews, and from a random sample of DPPR's that were reviewed. Environment, safety and health is one of eight performance measures that employees are rated on. In addition, employees are encouraged to complete a DPPR self assessment in which employees can bring concerns that may be hindering

their performance to the attention of their supervisor. These two measurement tools are used to develop a DPPR Performance Plan for any employee that does not sufficiently meet all of the performance measures. This system has been in place for over a year. Employees interviewed were knowledgeable about their performance appraisals and that they are held accountable for complying with all safety and health rules and regulations.

Contractors and sub-contractors are held accountable for safety and health through their contracts. (See Attachment I). The Safety Health Evaluation Support Teams (SHEST) are also given the responsibility to ensure that contractors and sub contractors are working safely.

In certain cases it is unclear whose responsibility it is to correct identified hazards; DOE, Lockheed Martin Energy Research Corporations, or the particular sub-contractor. Several employees mentioned that sub-contractors have not corrected hazards that they pointed out. This gives the perception that sub-contractors are not held to the same standards of safety and health protection as ORNL employees and that top Lockheed Martin Energy Research Corporations management is not asserting their authority over sub-contractors.

Recommendations:

1). Ensure that hourly employees are kept informed of sub-contractor activities and have clear lines of communication to the Division Safety Officers and SHEST.

2). Improve the system to ensure that sub- contractors are held to the same level of accountability for safety and health as Lockheed Martin employees.

Employee Involvement

Employees were selected for interviews by the OSHA Team with assistance from the employer (with the concurrence of the Atomic Trades and Labor Council, as appropriate) to provide the OSHA safety and health program evaluation team with a representative cross-section of job categories and work situations throughout the site. Most of the workers interviewed were managers, supervisors, and hourly employees from the Plant and Equipment Division. In addition, several employees were “weekly” and “monthly” employees, i.e., salaried workers from various laboratories.

Employees were comfortable talking to the OSHA evaluation team. Without exception they offered their views and opinions freely and openly. As requested, the OSHA safety and health program evaluation team offered hourly workers an opportunity to have their representative present during the interview. None of the workers indicated the slightest concern in being interviewed without their union present.

Employees indicated a good awareness about the site safety and health program and were quick to note the specific activities that the employer has undertaken at the site. All of the workers said

that they were given the necessary training for the conditions of their particular job. Some workers volunteered that the employer's emphasis on safety training goes far beyond what they believe is necessary. (The term "overkill" was heard more than once; the OSHA team considers such comments from workers as a good sign that the employer places a strict emphasis on safety and health.) Workers receive refresher training as needed, and are reminded about upcoming training needs by their supervisors. Several employees noted that their supervisors conducted safety and health meetings at the start of any new job, to go over the potential hazards.

In general, employees expressed satisfaction with the employer's efforts to maintain safe and healthful working conditions, noting that conditions at this site are much better than they had experienced at other workplaces where they had been employed in the past. For example, the employer quickly provides any personal protective equipment (PPE) that might be required, even going so far as to accommodate workers' reasonable preferences to ensure that the PPE is always used.

The main ways employees are involved in the safety and health program include, the authority to stop work; through various safety committees such as the Hoisting and Rigging and Electrical Safety, and Accident Investigation Committees; and by participation on special task teams to address safety and health issues across the Laboratory. These teams involve both research and bargaining unit employees.

Hourly workers indicated that they start each week with Monday morning safety meetings conducted by their immediate supervisors. The subjects for these meetings are provided by management, and can cover occupational and non-occupational topics. Hourly, weekly and monthly workers noted that they have quarterly safety meetings, which are attended by the division director. None of the workers indicated that the employer would stress production, cutting corners at the expense of safety and health.

Several workers mentioned a safety incentive program involving the distribution of "safety bucks," which can be redeemed for prizes from a catalog of merchandise. Because of time constraints, the OSHA safety and health program evaluation team did not fully examine the "safety bucks" program. However, based on responses in interviews, it appears that the program is used to reward positive behaviors such as attendance at safety meetings, making safety suggestions, etc., and is not focused on activities that might encourage under reporting of injuries, e.g., for going a certain amount of time without an injury.

Employees clearly indicated that company policy supports the appropriate level of reporting of injuries and illnesses by employees. When injuries occur, management focuses on finding the cause of the incident rather than looking for someone to blame. In addition, several employees noted that they are empowered to stop a job being done if they believe that it is being conducted in a unsafe manner. This authority, however, has only been successful is situations involving Lockheed Martin employees and not subcontractors. This undermines the efforts of Lockheed Martin's Safety and Health Program in that employees perceive that the rules only apply in certain

circumstances. This concerns the OSHA team because many of the hazards identified by OSHA were in subcontractor work areas.

Based on information from employee interviews, the site generally handles safety and health issues as a service provided to employees by a core group of highly talented and dedicated persons (including staff from the Office of Environmental Protection, Health Division, the Office of Radiation Protection, and the joint Labor/Management safety and health committee), rather than an integral part of everyone's duties. This is especially the case among hourly workers. For example, several employees indicated that they were consulted in the development of safety work permits, but were not an active participant or leader in the process. Other workers noted that the safety and health staff conducted periodic inspections of their work spaces, but that they themselves were not a part of the inspection teams and do not conduct their own inspections on a routine or continuous basis. Employees said that they could suggest topics for safety meetings, but they were not involved in conducing those meetings or researching the subject matter.

In the collective experience of the OSHA safety and health program evaluation team, companies with excellent safety and health programs tend to encourage full "ownership" of safety and health by the workers. Facilitation in this process provided by the employer, e.g., through the safety and health department, which encourages workers to take an active role.

Recommendations:

1). Employees' authority to stop work should apply in any case, including that of sub-contractors, without fear of reprisal.

2). To achieve the highest level of safety and health at the site, the team believes that more work needs to be done to secure the active participation of front-line workers in safety and health matters and decision making. The team would like to see workers more fully integrated into the processes of developing safety and health policies, setting safety and health priorities and participating in safety and health activities than they are at present.

3). The team believes that obtaining more day-to-day involvement of workers at this site would foster improvements in the safety and health, beyond the already impressive gains that have been made. The team is pleased to note that the site is considering a proposal from the Atomic Trades and Labor Council that would increase employee participation in safety and health activities.

Contract Workers (See Attachment I)

Worksite Analysis

Management Understanding

Based on a limited number of interviews, managers and supervisors demonstrated that they are genuinely concerned with employee safety and health issues. Supervisors and managers were able to identify the kinds of hazards to which their employees are exposed in the course of their work, thereby indicating a good understanding of working conditions. In addition, they maintain their own training in relevant safety and health areas and conduct regular meetings with employee where safety issues, including incidents involving workers, are discussed. Some employees, however expressed the concern that their Division Safety Officers and managers did not show as much of a presence on the worksite as they should, and therefore do not have a complete understanding of the hazards that front line workers come in contact with on a daily basis.

Recommendation:

1). The OSHA team believes that site managers and Division Safety Officers redouble their efforts to make sure that workers know that they are aware of the hazards of the worksite and employee safety and health concerns.

Industrial Hygiene

Industrial hygiene activities at ORNL are conducted out of the office of Safety and Health Protection which is one of three offices of the Safety and Health Department. The Safety and Health Department is one of thirteen offices under the overall Operations, Environment, Safety, and Health Department. There are a magnitude of safety and health professionals in these departments, who have expertise in their areas.

Industrial hygiene programs and sampling are generally the responsibility of the Office of Safety and Health Protection's Technical Support Group. Industrial hygiene sampling and sampling strategies are determined for each operation or project. Sampling priorities and routine sampling strategies rarely exist because there are no routine operations or projects. Any specific project may exist for several years or for only a day. Industrial hygiene sampling is conducted based on job hazard analyses and each division. In addition, sampling may be conducted in response to a specific division's, or occupational health services request. When industrial hygiene sampling is conducted, NIOSH sampling methods are followed.

Sampling results are compared to ACGIH threshold limit values (TLV's) because they are more conservative than the OSHA PEL's. Action limits are devised by using one half of the NIOSH TLV. Written records of sampling results exist, are in order, and contain all pertinent exposure information.

Control of exposure to health hazards is conducted by several means. The Division Support Section assists divisions in the pre-planning of work to eliminate hazards through engineering controls or to recommend administrative controls or the appropriate PPE. The OSH Assurance and Programs section provides subject matter expertise in safety and health programmatic areas and conduct special studies on an as- needed basis. They are qualified by education, certification,

and training. Employees in several groups are occupational H/S technologists, IH in training, CIH, ASP, CSP, radiation protection technologist, and Certified Occupational Hearing Conservationist. In addition, there are various other employees such as a registered sanitarian and certified environmental inspector available on the site.

Overall, the industrial hygiene program is adequate for the size and hazards at the site. It is well organized and implemented. The OSHA team is concerned, however, that the lack of routine sampling/ and or initial screening may not be adequate to prevent employees' exposure to hazards.

Recommendation:

1). In order to be pro-active, routine industrial hygiene sampling/screening should be conducted on a more regular basis and not solely based on employee requests or after an exposure may have already occurred.

Pre-use Analysis

New processes, materials, and equipment are analyzed before use begins, to determine potential hazards in many ways. In general, for construction and projects, there is a formal pre-job evaluation process conducted by the Safety Health Evaluation and Support Team (SHEST) which is completed during the pre-design engineering phase of a project. Hourly employees interviewed were aware of pre-job planning and most agreed that they are included in the process and that their suggestions are taken into account. In addition, there is an ORNL Service Subcontract Safety and Health Procedure that defines the process of controlling safety and health risks arising from on-site service subcontractor activities at ORNL or sites under ORNL jurisdiction. For service subcontract projects, members of the SHEST review the purchase requisition to determine health and safety requirements based upon the work to be performed. The procedure is an extension of Lockheed Martin Energy Research Corporation policy. Division Support representatives assist the R&D divisions in pre-planning for research projects.

Pre-use analysis is also completed before any new construction work begins, also conducted by the SHEST. Pre-bid meetings are held to plan, design, provide safety and health requirements, evaluate the engineering processes, screen contractors, award the bid and meet with the contractors. There are meetings at 30, 60, and 90 days before work begins. The contractors must be pre-qualified based on their safety and health performance. The terms and conditions for a job, including safety and health requirements are stipulated in the pre-work plan. This system is adequate as evidenced by employee interviews.

Hazard Analysis

Hazard analysis is usually done in pre-planning and pre-job briefings using job hazard analysis procedures. Employees are involved in this process as evident by the Lock Out/Tag Out program

developed by the crafts employees. Other task teams have been developed to conduct hazard analyses including a welding task team, fire protection engineering group, electrical safety committee and Employees Participating in Change (EPIC). Examples of written job hazard analyses were lacking.

Recommendation:

1). Ensure that pre-use analyses and job hazard analyses are conducted on a regular basis using a formal, written JHA system. Written JHA's should be kept on file and easily retrievable. Additional training may be required for employees responsible for conducting JHA's.

Routine Inspections/Hazard Correction Tracking

According to employee interviews, there are approximately six types of inspections conducted at ORNL. They include monthly OSHA type inspections, quarterly division safety inspections, division program reviews, triennial programs review, Lockheed Martin corporate audits, and DOE Operation Awareness Visits of contractor worksites.

The quarterly division safety inspections are usually conducted by employees and the Division Safety Officer (DSO). There is no written procedure per se, and the scope of the inspection is left up to each division. Each division has a self-assessment plan to determine their focus for the year. The OSHA type inspections are conducted by an in-house team. There was no evidence of formal written inspection procedures.

These inspections generate an inspection summary report including photos of the hazards identified and a list of corrective actions required. Each hazard is tracked in a database until it is corrected on a two tiered report process: For the first part, a digital photo is included with the written report showing and describing the item of concern. This is an interim report that is sent to the division(s). If these items are corrected within 90 days, then the report doesn't get sent to the next tier. The second tier is for items that were not corrected within that first 90 days. For these items, the group will go back to reinspect and re-photo the specific concern. Items that carry over beyond 90 days get put into an OSHA tracking database. These would most likely be items from individual facilities that are high dollar concerns for which the division is seeking funds.

The OSHA Evaluation Team did not see evidence that hazard correction and tracking was actually being done on a consistent basis. Some employees indicated that they have seen improvements in their work areas as a result of the quarterly DSO inspections and were verbally informed of when a hazard was corrected.

The fact that the OSHA inspection team identified many hazards at the site is evidence that the routine self-inspection process at ORNL needs to be strengthened.

Recommendations:

1). Improve the routine self-inspection process by implementing uniform management of the process across divisions.

2). Develop and implement written procedures for inspections for the internal OSHA inspection teams, and the division inspection programs.

3). Ensure that the Inspection Summary Reports indicate who is responsible for item corrections, hazards identified during the inspections are tracked until completion, kept on file for easy retrieval, and formally communicated to employees.

Employee Hazard Reporting System

Employees indicated that they utilized various methods to report hazards in their work areas including their supervisors, safety meetings, and Division Safety Officers. They felt the most comfortable, however, relying on the union health and safety representatives who, according to employees, have a better understanding of the day to day hazards than some of the supervisors or division safety officers. None of the employees interviewed feared reprisal for reporting unsafe conditions and, in most instances, the hazards they reported were corrected in a timely manner. Exceptions were when hazards were reported in a subcontractor's work area. Employees had the impression that subcontractors are not subject to the same rules for safety and health as they are. It was also mentioned that employees' authority to stop work does not apply to subcontractors.

Recommendation:

1). Implement a system to ensure that if an employee reports a hazard in a subcontractor's work area, it is tracked, corrected , and communicated back to employees. Ensure that stop work authority applies equally to all personnel at the site.

Trend Analysis

Trends of accidents, injuries, and illnesses are conducted mainly by the Occupational Safety and Program Analysis group, record keeper and industrial hygiene departments under the Office of Safety and Health Protection. There is evidence that trends of injuries and illnesses are addressed. For example, workers in the "mouse house" have claimed repetitive motion injuries. A strong ergonomics evaluation and intervention/prevention program is being developed.

Recommendation:

1). Involve the Occupational health nurses in identifying trends of injuries and illnesses.

Hazard Prevention and Control

Hazard Elimination or Control

There is evidence that hazard controls are properly implemented and that engineering controls are implemented where feasible. This was particularly evident in the Lead Shop, where ventilation was installed to control airborne lead levels. Employees were knowledgeable in the use, care, and maintenance of personal protective equipment. Of particular note is the exceptional management of the respiratory protection program. Locations for PPE use is established by the IH division. If needed, PPE can go up to a Level A. Use of PPE is based on competency, training, and pre-job briefings.

The OSHA simulated inspection teams, however, found many uncontrolled hazards. It was also noted that it is more difficult to get hazards corrected if the hazard exists in a sub-contractors' work area. This is evidence that the authority and responsibility for hazard abatement methods are not clearly defined and communicated among all employers and employees at the facility and/or the resources necessary to eliminate and control hazards are not available.

Overall, hazard identification practices at the site are adequate, however hazard control methods and funding for hazard abatement need to be strengthened.

Recommendations:

1). Develop and implement a system that defines lines of authority and responsibility for hazard abatement which is communicated among DOE, contractors, and sub-contractors.

2). Ensure that proper hazard control methods are investigated by all affected parties and that adequate funding exist to implement them.

Preventive Maintenance

According to employee interviews there is a new preventive maintenance program for the site. A central group is responsible for setting up what needs preventive maintenance with input form the field engineers. On certain machinery, vendors recommendations are used. The new system is computerized and gives and e-mail message when maintenance is due. This is an improvement over the old system which used cards and, according to employees, is working effectively.

Occupational Health Care Program (See also, Attachments II and III)

The Occupational Health Care Program was evaluated using an eleven point evaluation tool. Employees were generally satisfied with the availability and quality of medical care, although the services have undergone a staff reduction. Current staffing totals 28 persons, down from the total

of 36 persons three years ago. The clinic serves the 4800 Lockheed Martin personnel as well as approximately 500 Lockheed Martin Energy Research Corporations employees from the Y-12 facility and an additional 200-500 DOE personnel. No routine services are provided to subcontractors, although emergency medical assistance is provided until the employee can be transported to a local hospital. There are approximately 25,000 visits annually, the majority of which are walk-in clinic visits. The general medical services, including immunization, allergy shots, and other acute evaluations constitute the bulk of the services. There are 3,000 comprehensive physicals performed annually. There have been no cut-backs in services based on reduction in personnel.

The medical services required by DOE orders are much more stringent than those available in many of the offsite research facilities. There is, however, some concern that the streamlining of those orders would have the potential to reduce the services offered to the employees. In particular, the potential to use outside industry standards for services offered would be inadvisable, given the variety and severity of historical exposures, the mobility of workers between ORNL and the two production facilities, both of which have had greater exposure levels, and the uncertainty about many aspects of health outcome and the utility of screening for them. In the absence of fixed answers, it is important that protective general screening activities not be prematurely dismantled.

Overall, the evaluation shows a well-run occupational health care program that addresses both occupational and non-occupational needs of the employee population. The occupational health program is adequate for the size, nature of hazards and location of ORNL. It has been in place for many years as evidenced by the dates on the employees medical charts and the written procedures.

Recommendations:

1).The process for communicating hazards to the OHCP staff should be written to reflect the process that is in place.

2) . Each employee's medical file ought to include a readily accessible page of information regarding the hazards to which the employee may be exposed.

3). The occupational health care staff should be involved with employee training program re: adverse health effects of hazards through either writing, reviewing or delivering the information in the training program.

4). The staff should be integrated to understand one another's programs. This enhances the smoothness of the operation.

5). The surveillance role of the health unit should be enhanced through formal participation in safety and health meetings and committees; involvement with the company's trend analysis to

enhance the epidemiological analysis of injury and illness patterns and to plan risk reduction strategies; and modifications of the current medical record.

6). Improvements in formal feedback mechanisms and in the documentation of both exposures and follow-up safety interventions in the current medical records would be useful. This could be accomplished by incorporating specific chemical exposure information into the physical demands form (or by creating an additional form); by maintaining the exposure information in the current record; and by requesting follow-up information (and filing such information in the medical record) concerning implementation of safety recommendations, as found on the back of the MIR.

Emergency Procedures

There is a system in place for emergencies. Emergency response is provided by a comprehensive emergency response team which includes ambulance transportation and is staffed by emergency medical technicians. The occupational health care unit has a special 911 line for emergencies. This line is connected to the EMTs and several people can be contacted simultaneously by one telephone call, thus enhancing emergency communications. Depending on the severity of the injury or illness, the employee is transported either to the occupational health care unit or to the local emergency room. EMT's determine the severity of the injury. In addition to the special 911 number, the EMTs also maintain radio contact with the occupational healthy care unit during an emergency. According to an interview with the chief nurse, routine drills are performed periodically.

Employees also receive General Employee Training (GET) which explains in general terms the hazards of the facility, the alarm systems, restricted areas, and what to do in and emergency. Additional training that employees may receive, depending on their job, include fire hazards, chemical hazards, and hazardous waste and emergency response training.

Safety and Health Training

The safety and health training system at ORNL is currently being reorganized. Responsibility for training falls with in the Training Integration Office (TIO), it's division training officers (DTO's) and division training managers. The Training Integration office falls under the direction of the Office of Environmental Protection. As of May 1997, the TIO is "decentralizing" the training for the X-10 site. Formerly, the "centralized" LMES training was used for K-25, X-10 and Y-12 sites. They will use Subject Matter Experts (SME) from the specific programs at X-10 as Training Providers. In the Training Program, there are guidelines listed for instructor qualifications and suggestions made for train instructors' training (i.e., may suggest an instructor skills program for a SME who has never conducted training). This approach to training provides better communication and interaction and will get the expertise out to the employees and allow feedback from the employees directly to the experts. The option to use the LMES training is still available to the divisions.

The *ORNL Training Program Description* (ORNL-TR-001) was recently put in place. This is a "performance" program and is in its infancy. A draft *LMER Institutional Requirements Training Matrix* is being circulated to the divisions which is used by the DTO's to help assess the training needs of the employees within their division and schedule the training. The DTO is usually a collateral duty job (admin position) while the DTM is usually a full-time position. Many times the DTO/DTM works with the employees' supervisor to help determine training needs.

There is no central depository for hard copies of training records. Training files are maintained on the System for Training Administration & Records (STAR). On Oct. 1, 1998, the training files will be transferred to Systems Application & Products (SAP) which is a plant wide business management database system. The training providers (SMEs) are responsible for maintaining everything associated with the training course. Within 5 days of providing the training, the information must be entered into the STAR (soon to be SAP) database. Training records are available via the database to DTO/DTMs, etc. On a monthly basis, the division training programs are audited by the ESH&Q Integrated Management Assessments.

Contractors' training needs are determined by the Safety & Health Evaluation & Support Team (SHEST). The SHEST is a self-directed work team with approximately seven members from the OSHP. The team evaluates and defines the requirements for contractors (including initial training). Depending on how the contract is written, the contractor may be required to have employees trained prior to work or they may be trained by Lockheed Martin Energy Research Corporation.

Some of the types of training employees receive include emergency response, facility access training, hazardous waste, asbestos, and nuclear criticality safety depending on the employees' job functions. General Employee Training (GET) includes hazard communication, radiation protection, and personal protective equipment. All persons on-site for more than ten days must receive GET.

The "decentralized" training programs that are being implemented at ORNL promise to be an improvement over the current training. Using Subject Matter Experts (SME) from the specific programs will get the on-site expertise directly to the workers and allow direct feedback from the workers to the SMEs. This method should provide site-specific training, and better interaction between employees and management. Overall, the training programs are adequate for the size and hazards of this site, however, it is premature to evaluate the new training program's effectiveness.

<u>Recommendations:</u>

1). Ensure that the streamlining of DOE orders that do not have a direct regulatory source do not adversely effect supervisor training, such as Hazard Communication.

General Review of Safety and Health Conditions

The OSHA safety and health program evaluation team did not conduct first-hand examinations of the facility to assess safety and health conditions for housekeeping or other general safety and health conditions. Instead, the team relied on the findings from simulated OSHA inspections that were being conducted concurrently as a separate objective of the OSHA/DOE/Oak Ridge Pilot Project. As this report is written, a number of the simulated inspections have been finalized, with citations issued -- some of them classified as serious -- and additional citations are pending. This may mean that the site needs to improve the hazard recognition skills of its staff.

Attachment I

Oak Ridge National Laboratory
Contract Considerations

Introduction

OSHA conducted a health and safety program evaluation at the Department of Energy (DOE) Oak Ridge National Laboratory (ORNL), a Government-Owned-Contractor-Operated (GOCO) entity. Included in this evaluation was an examination of the contractual mechanisms DOE has in place to assure worker protections, and is provided below. Lists of employees and documents interviewed or reviewed are included in Attachments 1 and 2.

DOE/Contractor Relationship

DOE is significantly dependent on contractual relationships to assist in carrying out its mission and function. These relationships allow DOE to tap into the most cost-effective or most desirable candidates to provide or further develop highly specialized expertise; however, this also fosters highly dependent relationships. Via this mechanism, DOE has established and currently provides oversight to GOCO facilities where defense, production, research, and remediation functions are conducted by contractors (sub- and prime). Subcontractors are normally hired via prime contractor mechanisms, and provide a wide spectrum of duties and responsibilities to support the primes and DOE.

Because many of the tasks associated with DOE's mission are inherently high hazard, it is essential that contractual obligations include significant worker protections. To be effective, these protections should apply equally across the workforce, and include subcontractors, contractors, and DOE employees whom mainly oversee contractor activities. Presently at ORNL, a variety of mechanisms are in place to assure the prime contractors meet worker safety and health obligations, and a more limited approach is exercised over subcontractors.

In early 1996, DOE initiated a radical departure from the existing oversight model at the Oak Ridge complex. DOE Oak Ridge Operations Office personnel responsible for health and safety were moved from a distant office setting into the mainstream activities at the sites. These professionals became part of "the line process", and a more direct interrelationship or matrix was established between contractor and overseer. An increased awareness of prime contractor and subcontractor activities was fostered by this reorganization of DOE resources, and appears better able to address immediate concerns.

Prime Contractors

Currently, the prime contractor providing services to the Department of Energy (DOE) at Oak Ridge National Laboratory (ORNL, also previously known as X-10) is:

Prime Contractor	Employees*	Site/Activities
Lockheed-Martin Energy Research (LMER)	4000-5000	ORNL/ Mainly energy, ceramics, chemical synthesis, robotics, computer, and materials science research

* estimate on site (total estimates of employees are: ORNL (5,000 + 4,000 visiting researchers).

It should be noted that although Y-12 is not covered in this evaluation, there is currently a transient nature where employees transfer from or into Y-12 as economics and employment interests dictate. Some sharing of subcontractor resources also occurs between Y-12 and other sites. The prime contractor at Y-12 is currently Lockheed-Martin Energy Systems (LMES).

Subcontracts

All primes and DOE use or abide by governmental contract requirements (Davis-Bacon, FAR, DEAR, Service Contract Act, etc.). LMER uses specific safety and health-related criteria to exclude from initial bids any contractors with poor safety records. For instance, with construction contracts, LMER uses a prequalification mechanism and also Construction Service Institute (CSI) format. Included in any request for proposal or bid package would be the contractor's health and safety record of performance, and an indication of the company's Experience Modification Rating (EMR). The EMR is used to filter out potentially poor safety performers prior to contract consideration (an EMR < 1 is normally indicative of good safety performance; >1 requires the contractor to submit OSHA 200 logs and may disqualify).

Memorandums of agreement also exist with other prime contractors at other sites within the Oak Ridge complex [Y-12 and prime LMES, and East Tennessee Technology Park (ETTP) and prime Bechtel Jacobs] to allow for exchange of services, and could also be used to access a subcontractor from another prime.

Subcontractor Oversight

At ORNL, the prime contractor LMER has established a formal system to provide subcontractor health and safety oversight. A self-directed work team consisting of approximately six FTEs with backgrounds in industrial hygiene, general, and construction safety provides day-to-day interaction with subcontractors as well as DOE, union personnel, and other contractors. This unit is part of LMER's Operations, Environment, Safety, and Health Division, Office of Safety and Health Protection, and is known as the Safety and Health Evaluation & Support Team (SHEST). To give an example of the formal system created between the subcontractor and SHEST, in the

Basic Ordering Agreement (BOA) for subcontractors at LMER, critical lift plans are required to be submitted to SHEST at least 10 days prior to the lift and are not performed until approved. SHEST has a dual function in offering technical support to the contracting officer and subcontractors, and also providing compliance oversight over the subcontractors. Currently, SHEST provides mainly oversight, with approximately 50% of their time spent on inspecting the contractor worksites.

Also within the Office of Safety and Health Protection, the Atomic Trades and Labor Council (ATLC) has three individuals assigned to provide health and safety oversight representation and act as an interface between the workforce and the prime contractor on health and safety issues.

Oversight mechanisms of subcontractor control of safety and health in the workplace are shown (DOE also provides subcontractor oversight on a limited basis):

Site	**Subcontractor Pool**	**Subcontract Oversight**	**Union Activity*/Safety Committee Involvement**
ORNL	Service - Large (~400), Construction and hazwaste are average	SHEST interaction and subcontract review from beginning to end of contract (mainly construction & hazwaste). Also has pool of other S&H professionals as needed. Inspections are routine. Some feedback is given to subcontractor regarding safety performance but not formalized. Abatements are normally immediate.	ATLC oversight Has 6 safety committees and subcommittees as the need arises (mainly for prime)

* Unions that have created and assigned individuals to provide safety and oversight, guidance, and employee representation on-site.

All primes and DOE indicated that they have sufficient negative incentives and tools to correct inappropriate health and safety behavior on the part of any subcontractor; however, all parties also indicated they do not have any positive incentives in place to enhance existing behavior or encourage greater than average health and safety subcontractor performance. A single exception is the subcontractor desire for future contracts. Because the site has controlled access, “badge pulling” is the most significant and drastic motivational tool for rectifying subcontractor health and safety issues, and it has been employed rarely. Contractor controls have been exercised via examples given where an ORNL subcontractor was dismissed during a trailer installation near the HFIR facility when electrical safety considerations where not being addressed adequately.

While inspections or walk-throughs are commonplace for most subcontractors, and corrections are implemented, very little safety and health-related performance criteria or feedback is provided the subcontractor on any type of scheduled basis or when closing out the contract.

Oversight Resources

Unless otherwise specified in the contract, most safety and health monitoring is conducted on an as-needed basis by SHEST, Unions, and DOE. All interviewees indicated that DOE provided monitoring or evaluation of the workplace on a limited, as-needed basis, and that the day-to-day activities were the contractor, or subcontractor responsibilities. All oversight parties indicated that tools, resources and expertise are available, although indication was given that response in some areas was slow (radiation protection, for instance). SHEST members indicated that their ranks have dropped significantly (from 13 to 6 employees) over the past two years and they will be spread pretty thin if increased subcontracting occurs. Primes at the Oak Ridge complex and DOE have indicated that the move from M&O (Managing and Operating) to M&I (Managing and Integrating) currently occurring at GOCO facilities will definitely enhance the integration of more subcontracting at Oak Ridge.

Subcontractors have indicated adequate remedies are in place to assist in accommodating unanticipated changes in work requirements such as a new OSHA regulation, DOE order, or other significant change impacting resource allocation of the existing contract.

Visiting Researchers

An additional concern within any research facility is the aspect of guest researchers. In order to expand its horizons, further stimulate research, and potentially bring in additional income, DOE has encouraged the concept of "user" facilities and visiting researchers. DOE's research facilities have very sophisticated, expensive energy sources or other research that is highly attractive to others. It is normally economically difficult for researchers outside of DOE to replicate these items, and a system has been established at many DOE National Laboratories to provide guest researchers access to these user facilities to complete significant research, and share findings and resources. Guest researchers are from anywhere in the world, and their safety and health cultures can be significantly different from DOE's. A significant challenge is therefore presented to assure visiting researchers are provided the same safety and health understanding as the rest of the workforce whom may be working side-by-side or providing support. DOE and the prime contractor (ORNL-LMER) has indicated that strict controls and required training are in place for subcontractors and visitors on site for extended periods of time (normally 10 days or greater). This includes meeting or exceeding training requirements established for employees involved in similar activities, and removal for cause of researchers (and subcontractors) that do not follow or understand safety and health criteria. Interviews with employees and supervisors support these statements; strong emphasis is placed on assuring that visiting researchers are operating in a safe fashion. Normally, these researchers will also be assigned to specific individuals that will provide supervision, training, accountability, and review of any work to be performed.

While visiting researchers are not subcontractors, and will most likely not be covered under OSHA in terms of a true "employee relationship", they are part of the employer's activities. If a visiting researcher were to impact the safety and health of any employee at the site, OSHA would

normally consider this as a situation where the employer has not assured a safe and healthy workplace, and provide some incentive to the employer to correct any problems. If a visiting researcher may compromise his or her safety only, OSHA may not have a legal recourse due to lack of an employee/employer relationship. Although OSHA did not have an opportunity to fully explore the existing relationship between visiting researchers and LMER, this relationship was examined at the previous pilot project at Argonne National Laboratory.

Contract Language - Indemnification and Other Concerns

DOE, as well as prime contractors such as LMER, have decided to continue indemnification of contractors and subcontractors specifically in the area of nuclear hazards. This was an extension of the Price-Anderson Act and amendments, and DOE has recently indicated it will continue to include indemnification clauses in contractual arrangements. Both the Nuclear Regulatory Commission (NRC) and OSHA have recommended DOE modify its indemnification criteria. While it is unknown what OSHA-related contractual adjustments are planned by DOE or prime contractors if external regulation occurs, recommendation is made for both to alter contracts to indicate that the subcontractor will bear some of the impact from OSHA oversight activities that result in citations or other punitive actions.

Conclusions/Recommendations

The ORNL site has control mechanisms in place via SHEST to assure subcontractor compliance. Adequate oversight is noted and use of inspections, abatement procedures and further administrative controls are in place. Subcontractors and contractors are bound by contract to provide effective safety and health programs; however, abatement plans could be more formalized and more reflective of OSHA's timelines. Although the subcontractor and contractor response to hazards with a high potential for physiologic or property damage are immediate, other corrections occasionally linger. The implementation of SHEST has created a more formalized structure to assure consistent subcontractor compliance, and resource issues should be further examined if accelerated subcontractor activity places additional burdens on this team. Included below are recommendations to DOE and the prime contractors to further enhance the contractor health and safety relationship.

- Increase SHEST interaction early in the bid proposals/final contract development. Examine SHEST establishing health and safety performance indicators for the subcontractors. Additional safety and health planning by SHEST to prepare a potential subcontractor, and with the eventual subcontractor selected should result in less problems and resource drain during the work.
- Currently, subcontractors from one prime can impact the health and safety of another prime or subcontractor with confusion over what remedy or accountability will occur to rectify the activity. Examine DOE oversight to assure a fair mechanism is in place to correct health and safety behavior between all responsible parties.

- Modify present contract language to address contractor liability and accountability in regards to OSHA-related punitive actions (should external regulation by OSHA occur). Current indemnification clauses for nuclear hazards only allow for civil/criminal penalties with DOE-related rules, regulations, and orders.
- Provide a more performance-based mechanism for subcontractors. Presently, the only positive health and safety-based performance incentive for subcontractors is obtaining future work with DOE or the prime.
- Examine health and safety performance indicators and how they can be used to evaluate and provide feedback to the contractor.

Attachment 1
Individuals Interviewed

Employee Interviewed	Title	Findings
Ed Krieg	LMER Director of Engineering and Construction	Provided input regarding constructing contracting, SHEST, and the interaction of H&S professionals on the ORNL site.
Dell Morgan	LMER Construction Specialist	Provided input regarding constructing contracting, SHEST, and the interaction of H&S professionals on the ORNL site.
James Rivers	LMER Contracts & Vendor Liaison Manager	Provided input regarding constructing contracting, SHEST, and the interaction of H&S professionals on the ORNL site
J. Robert Ihle	LMER SHEST Representative	Provided background concerning SHEST and contractor/DOE interactions.
D. Greg Rowland	LMER SHEST Representative	Provided background concerning SHEST and contractor/DOE interactions.
Yvonne Horton	LMER Head of OSH Assurance and Program Support	Provided information regarding SHEST and subcontractor interaction with LMER EH&S groups
Jim Blankenship	LMER ATLC Health and Safety Representative	Provided information regarding SHEST and subcontractor interaction with ATLC
Clark Surrett	LMER, Power and Equipment Division, Maintenance Supervisor	Supervises 12 employees including millwrights, electricians (two on each job always), sheet metal, labor. Infrequently works with subcontractors. Provided information regarding prime and safety committees.
Jim Watson	LMER Power and Equipment Division, Supervisor	Provided input regarding safety committees, subcontractor interaction and “Safety Bucks” incentive program for LMER employees. Suggested that Safety Bucks should also be used in cafeteria and other areas on site.

Attachment 2
Documents Reviewed

Documents Reviewed	Author	Relevance
Work Plan for the High Ranking Facilities Deactivation Project at Oak Ridge National Laboratory (ORNL/ER-322) Revision 1	Advanced Integrated Management Services, 3/96	Sponsor LMES. Proactive workplan which details the tasks required to stabilize/deactivate specified facilities, while also cutting costs and minimizing risk.
Basic Order Agreement (BOA) for Task Release Projects	LMER/Feb 23, 1998	General Work Requirements (template generic contractor requirements), and submittal specifications for safety and health related certifications, documents, workplans, etc. Safety and Health Requirements* (specifies document requirements, indicates person responsible for internal (subcontractor) safety and health oversight, and other roles and responsibilities in regards to monitoring, applicable codes and regulations, PPE and training requirements, hazardous work requirements, temporary facility, hazardous waste, and any additional safety or health related requirements.
BOA Attachment 1	LMER	Required Training Listing**
BOA Attachment 2	LMER	Activity Hazard Analysis: Detailed documentation indicating what hazards are present for construction activities and accountability sheets.
BOA Attachment 3	LMER	Hazardous materials inventory system report - documentation indication what chemicals are onsite, where they are, and responsible parties.
BOA Attachment 4	LMER	Tabulation of Work hours
BOA Attachment 5	LMER (8/23/98)	Critical Lift Plan
LMER Procedure (OSHP-076) Rev 0, ORNL Service Subcontract for Safety and Health	LMER 1/27/96	Procedure for subcontractors to follow to minimize safety and health risks. Also includes SHEST review and responsibilities.
Nuclear Hazards Indemnity	DOE, 2/94	Indemnification clause for nuclear hazards.. Clause does include provision for civil or criminal penalties, but only for DOE rules regulations and orders.
Hazardous Material Identification and Material Safety Data	LMER/LMES 3/96	Document stipulates that contractors must provide MSDS for all chemicals as per OSHA regulations

Hazardous Materials Reporting	LMER/LMES 3/94	Document stipulates that contractor is required by OSHA and EPA regulations to maintain records and report on quantities of hazardous materials onsite.
Limitations on Subcontracting	LMER/LMES 9/98	Subcontract limitations in regards to % costs.
ORNL Subcontractor Qualification Criteria	6/26/98	Prior safety performance and other criteria used to filter potential contractor applicants.
BOA - Steam Plant Boiler	LMER	BOA for construction installation activity on steam plant boiler.
General Terms and Conditions, Construction Contract Template (CON 6/98)	LMER/LMES 6/98	Template for construction contracts which also includes a clause for termination for cause if health and safety problems persist on the part of the seller.
DOE National Purchasing Agreements	DOE	Leveraged buying via national subcontractor agreements.
Near miss occurrences at ORNL- Oct	10/28/97	Details near miss accidents occurring at the ORNL complex by sub- and contractors from 9/27 to 10/27/97
Recorded Incidents (ORNL)	1991-1997	All accidents and near-miss accidents recorded from 1991 to 1997 at ORNL.
SHEST Responsibilities in Service Subcontract Safety and Health	LMER	Details the SHEST activities and responsibilities in assuring subcontractor safety and health performance.
Closeout Overview	LMER/LMES	Specifications for subcontractor closeout of task(s).
SHEST Field Observation Report	LMER	SHEST reports documenting findings during an inspection and any corrective actions taken.

* It should be noted in Section 1.03 B that "*the person responsible for safety and health shall receive formal training from an OSHA-certified instructor*". OSHA does not certify instructors; however, the intent of this statement is to assure any training provided is of sufficient quality to allow the responsible party to be considered a competent person in the subject matter.

** While this appears as simply a template, HAZWOPER training requirements were missing.

Attachment II

Occupational Health Care Program

On August 11 and 12, 1998, Dr. Rosemary Sokas and I participated as team members in the safety and health program evaluation of the DOE government owned, contractor operated facility, Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee. This evaluation is part of the DOE and OSHA pilot project to evaluate the transfer of DOE's health and safety enforcement to OSHA.

As team participants, Dr. Rosemary Sokas and I were assigned to evaluate the facility's occupational health care program and record keeping system. We both toured the facility, interviewed the record keeper, and reviewed worker's compensation records. Dr. Sokas interviewed the physicians, reviewed the occupational health care computer data system and reviewed medical records. I interviewed the nurses, reviewed medical records, and reviewed the policies and procedure manuals. The following are the findings of my portion of the evaluation of the occupational health program and the recordkeeping system. Dr. Sokas is providing a separate report of her findings.

OCCUPATIONAL HEALTH CARE PROGRAM

Background:

ORNL has approximately 4600-4700 Lockheed-Martin employees and several subcontractors.

The facility's Management and Operations contractor is Lockheed-Martin Energy Research Corporation. Both the record keeping system for the facility and the occupational health care program (known at ORNL as the medical program) are provided by Lockheed-Martin Energy Research Corporation employees. Some subcontractors utilize the on-site occupational health services, some don't. However, all subcontractors use the emergency response services.

The Occupational Health Care Program (OHCP) is staffed by 27 employees under the direction of a medical director, Dr. Phillips. The staffing consists of four nurses, three physicians, eight administrative staff, one physician's assistant, laboratory staff, etc.

Services:

The ORNL OHCP offers a comprehensive occupational health care program as well as non-occupational health care services. The non-occupational health services include voluntary physical examinations (based on age), sick call for non-occupational illnesses, administration of allergy injections, blood pressure checks, health and illness counseling and wellness programs.

According to interviews, approximately 50-60% of the occupational health nurse's (OHN) time is spent these non-work related activities. Employees expect this service.

The occupational health services include preplacement and periodic health examinations with biological monitoring and other testing required for medical surveillance programs, treatment of work-related injuries and illnesses, return to work evaluations with accommodation of disabilities and DOE mandated drug screening programs. The occupational health unit is open from 7:00 AM until 5:00 PM. Physicians work until 5:00 PM and are available on a 24 hour beeper system.

Emergency response is provided by a comprehensive emergency response team which includes ambulance transportation and is staffed by emergency medical technicians. The occupational health care unit has a special 911 line for emergencies. This line is connected to the EMTs and several people can be contacted simultaneously by one telephone call, thus enhancing emergency communications. Depending on the severity of the injury or illness, the employee is transported either to the occupational health care unit or to the local emergency room. EMT's determine the severity of the injury. In addition to the special 911 number, the EMTs also maintain radio contact with the occupational healthy care unit during an emergency. According to an interview with the chief nurse, routine drills are performed periodically.

The occupational health care facility houses a laboratory which provides a variety of blood tests, urinalysis, spirometry (pulmonary function testing), x-ray and audiometry. The testing is appropriately performed on-site by certified individuals using appropriately certified and calibrated equipment. The Occupational Health Care Program also has optical services available providing prescription safety glasses for employees as needed.

The medical director of the occupational health care program service reports to the Associate Director for Operations, Environment, Safety and Health. The occupational health nurses and other staff report to the medical director. Each staff member is assigned specific job tasks. For example, the physician's assistant is responsible for the medical surveillance program. One of the nurses is responsible for work-related injury and illnesses. Another nurse takes responsibility for allergy shots. Another is responsible for emergency response. All work together to ensure tasks are accomplished.

The OHCP has instituted an effective Bloodborne Pathogen Exposure Control Plan with a needle and biological waste system that decontaminates the waste and pulverizes the sharps so that the waste can be disposed of in the regular trash.

Evaluation

Using the benchmarks in the VPP Occupational Health Care Assessment Tool, the ORNL Occupational Health Care Program was evaluated for eleven desired outcomes or elements. The results of the evaluation are described below.

1) Occupational Health Care Services are delivered consistently, effectively and in accordance with acceptable standards of practice:

The occupational health service has a comprehensive and well-written policy and procedure manual which appears to have been written in accordance with accepted DOE standards. The manual provides space for recording the last date of review for each policy or procedure. There is a process in place for updating the procedures regularly. Procedures for medical surveillance system are kept on the computer. The physician's assistant is responsible for updating these procedures.

There are written medical directives under which the nurses operate in accordance with Tennessee state law. These medical directives are complete and in good order.
The Bloodborne Pathogen Exposure Control Plan located in the Occupational Health Care Unit (Medical Unit) lists the employees in the medical unit who are expected to have exposure to blood and blood products. However, the employees from the emergency response team - EMTs and others (first responders) are not listed. The chief nurse explained that they are listed in a plan located in the fire house. However, all employees in the facility who have occupational exposure to blood and blood products should be listed in one place - a master list. This list should be kept in the medical unit since this is where post-exposure evaluation and treatment will be conducted as well as any necessary follow-up.
Recommendation: Job titles of employees with occupational exposure to Bloodborne Pathogens, such as EMTs should be added to the Bloodborne Pathogen Exposure Control Plan located in the OCHP(medical unit).

2) Employees have access to occupational health services.

The occupational health service is open from 7:00 AM until 5:00 PM to accommodate shift workers. The occupational health service is available to each worker at some time during their work day. Medical surveillance and other physical examinations are scheduled during the employee's work day. Emergency transportation is available 24 hours a day. The employees have equal access to the OHCP.

3) OHCP ensures that employees are placed in jobs where they are able to perform essential job functions without harm to themselves or others.

ORNL job descriptions include physical demands and potential hazardous exposures of the job. These job descriptions are utilized during the preplacement examinations conducted on all employees. The on-site occupational health physician determines if the employee can be placed in a particular job or if accommodations must be made. Reasonable accommodation of both temporary and permanent disability is made as necessary.

4) Hazard Communication

Interviews with the OHCP staff indicate that they know the hazards present in the workplace and the most frequent injuries/illnesses reported on the log. The OHCP staff have access to all MSDSs of all chemical hazards located at ORNL through a computer data system. They can readily look up information related to exposures. If they need further information, the Industrial Hygiene department provides it.

However, the OHNs at ORNL are not involved with formal safety and health training programs. The Industrial Hygiene Department provides these safety and health training of employees. The physicians and the physician's assistant review the training programs. The OHNs conduct informal training when employees visit the health unit if employees have questions or indicate a need for information.

The procedures for communicating the presence of new hazards is communicated in writing from the supervisor or the industrial hygienist to the Physician's Assistant and the scheduler. Whether these communication processes are written is unclear. However, the staff understands the process by which information on hazards is transferred. According to the nurse interviewed, the supervisor notifies (sends a special form) the industrial hygiene department (with copy to the OHCP) if there is a change in process, new chemicals being used, etc. or if new employees are working with a hazard. An Industrial Hygienist then performs exposure monitoring if necessary and tells the OHCP which employees will be affected by the change.
Recommendation: Ensure the procedures for communicating the presence of new hazards are written and included in the procedures manual.

The staff of the occupational health unit are compartmentalized. Each has a specific responsibility regarding one aspect of the occupational health care. These individuals do not seem to be very knowledgeable about the other aspects of care conducted in the department. Increased communication between the individuals, sharing information about their programs would enhance the service.
Recommendation: Ensure that the OHCP staff are familiar with each others projects and processes through regular staff meetings.

5) OHCP staff are used to help identify workplace hazards.

According to interviews with the staff, the occupational health care program is closely tied to the safety and health program at ORNL. Communication of information is clear. For example, the occupational health care staff notify the safety representative and the industrial hygiene department if a work place injury is suspected. Depending on the type of injury/illness the safety and industrial hygiene department and the supervisor conduct an investigation.

According to the OHCP staff, it is rare for the nurses to participate in hazard assessment of the work site. The physicians participate occasionally. However, physician participation is usually limited to problem solving at the time of an incident. The industrial hygiene department routinely conducts the hazard assessment and walk throughs and communicates the information to the OHCP as necessary.

The OCHP staff have safety meetings once a quarter. They have annual Bloodborne Pathogen, Fire Safety and Emergency Response training.

The OHCP staff are all board certified in occupational health and maintain continuing education to keep them up to date on new issues in this field. The company pays for continuing education for both the nurses and the physicians.

6) Biological monitoring of employees and employee medical surveillance programs are conducted for early recognition of adverse health effects and efficacy of protective measures.

As noted earlier there are written protocols for physical examination and biological monitoring/testing for specific hazardous substances. These programs are managed by the scheduler and the physician's assistant. Employees are enrolled in the program through supervisor notification to both the industrial hygiene department and the OHCP. The physician's assistant writes protocols for conducting an examination if not already in listed in the procedures. The medical director oversees the medical surveillance program. The OHCP scheduler adds the employees to the list for medical surveillance examinations and schedules the examination. When the employee arrives, the OHN conducts the preliminary examination. The biological testing is done by the laboratory staff as appropriate. The physician finalizes the examination and determines whether the employee is able to perform the job functions safely.

Employees are notified by the scheduler of their upcoming required physical examination. The computer data system has a tickler file which automatically notifies the scheduler of upcoming required exams. The scheduler notifies the employees by e-mail. The medical surveillance program is strong.

7) Signs and symptoms of adverse health effects among workers are identified early and treatment interventions are effective.

When an employee visits the OHCP for complaint(s) of suspected work-related illness/injury, the occupational health nurses and physicians evaluate the employee, then the nurses complete an internal form entitled Medical Incident Report as well as the First Report of Injury in compliance with the Tennessee Workers' Compensation laws. These forms are faxed immediately to the record keeper. All cases of complaints related to work are treated by the nurses and physicians as work related. The workers' compensation carrier determines compensability. The record keeper determines recordability.

The employee records are purged regularly of old documents which are then archived in a room a short distance from the treatment area. This archived records are readily available. However, when an employee comes to the occupational health unit for sick call and does not state that the illness/injury is work-related, the attending nurse does not have a mechanism readily available to compare symptoms to hazardous exposures. This lack of information can hamper the nurse's ability to determine a potential connection between the employee's symptoms and hazardous exposures. It is possible that signs and symptoms of hazardous exposure may be missed and attributed to non-work illness.
Recommendation: Keep each employee's job description and hazardous exposures in the employee's medical file for ready access to the nurse as physical assessments are conducted. In this way, signs and symptoms of potential exposures can be identified early, the employee treated and industrial hygiene notified to ensure abatement of the hazard.

Treatment protocols appear to be effective and applied consistently. Interviews with employees indicate satisfaction with occupational health care services received. The occupational health care staff instruct the employees to return to the unit if symptoms persist. Follow-up visits are scheduled for work-related injuries and illnesses, however, it is the responsibility of the employee to keep the appointment. When employees do not follow-up with their appointments or do not return to the unit, the staff assumes that the employee is no longer having symptoms or problems related to the illness/injury. The staffing pattern does not allow for individual follow-up initiated by the OHCP staff.

8) Employees are removed from hazardous work as appropriate.

On the cursory review of the procedure manual, a written medical removal plan was not in evidence. However, the OHCP has policies for medical monitoring, and accommodation of disability. The OHCP is in compliance with regulations governing lead exposure and other specific hazards. Employees with work restrictions for work-related injuries and illnesses are accommodated. The physician determines whether or not the employee can perform the job or needs accommodations.

9) Health surveillance data in aggregate form are communicated to employees and management for future risk.

According to the interview with the OHN, the record keeper and industrial hygiene department conduct trend analysis. OHNs are not involved.
Recommendation: The occupational health nurses become involved in review of the occupational as well as non-occupational injuries and illnesses to note trends and potential clusters.

10) Recording/record keeping

Occupational health records - employee medical records appear to be kept in accordance with accepted standards for medical confidentiality and employee access. Specific procedures exist for access of medical information and maintenance of confidentiality. These procedures are appropriate and strictly upheld.

11) Occupational Health Care Program is evaluated and revised based on findings.

The OCHP has an annual quality assurance audit involving review/audit of medical records, etc.

Summary

The evaluation shows a well-run occupational health care program that addresses both occupational and non-occupational needs of the employee population. The employees interviewed are satisfied with the OHCP services. The process for communicating hazards to the OHCP staff should be written to reflect the process that is in place. In addition, the each employee's medical file ought to include a readily accessible page of information regarding the hazards to which the employee may be exposed. The occupational health care staff should be involved with employee training program re: adverse health effects of hazards through either writing, reviewing or delivering the information in the training program. Also, The OHCP staff should be involved with the company's trend analysis to enhance the epidemiological analysis of injury and illness patterns and to plan risk reduction strategies. The staff should be integrated to understand one another's programs. This enhances the smoothness of the operation. The occupational health program is adequate for the size, nature of hazards and location of ORNL. It has been in place for many years as evidenced by the dates on the employees medical charts and the written procedures.

RECORDKEEPING

Year	Work Hours	Injury Incidence Cases	Lost Workday Cases	Injury Incidence Case Rate	Lost Workday Case Rate
1996	10,485,235	239	84	4.56	1.60
1997	9,752,405	202	88	4.14	1.80
1998 (7/98)	5,191,484	128	54	4.93	2.08
3 year totals and rates 1996-1998 (to 4/1/98)	25,429,124	569	226	4.54	1.82
1997 BLS Rates for SIC 8731				2.7	1.0
Percent above or below BLS rate				***+68%***	***+82%***

As stated in the background information, the recordkeeping system for ORNL is managed by a Lockheed-Martin employee. This employee has been responsible for recordkeeping at the facility for many years.

Worker's compensation first reports of injury, employee medical files, first aid logs and reports and Medical Incident Reports from the occupational health care program were reviewed. These records were complete, in order, and support the data recorded on the injury/illness log. Employees who were interviewed indicated knowledge of the OSHA logs. The information they provided supported the data on the log.

No problems were noted with the recordkeeping system. The system is well-documented and records are kept in accordance with OSHA regulations. In fact, the system is so well-documented it should be used as a model for other recordkeeping systems.

The recordkeeper is very knowledgeable about OSHA's Recordkeeping Guidelines for Occupational Injuries and Illnesses. If a complicated case or a question arises, she has access to DOE's hotline on the Internet. In addition, she can telephone a DOE representative as necessary. The recordkeeper relies on information (both written and oral) from the on-site occupational health nurse, the OSHA guidelines and discussions with DOE representatives when deciding whether a case is recordable.

The site has problems in the “mouse house”, an area of the lab where mice are caged. Workers there have claimed repetitive motion injuries. A strong ergonomics evaluation and intervention/prevention program is being developed to address the problem.

However, the ORNL recordkeeper takes no responsibility for accuracy of subcontractor recordkeeping systems. The recordkeepeer receives a copy of the subcontractor log and then forwards to the appropriate DOE office. The prime contractor, Lockheed-Martin Energy Systems, does not audit the logs or vouch for their accuracy. According to conversations with a DOE representative, this is in opposition to DOE contract requirements stating that a prime contractor must assure that subcontractors are in compliance with OSHA recordkeeping rules.

DOE uses performance-based contracts which vary among contractors, but may include injury and illness performance criteria. Subcontractors’ injury and illness history is taken into account during the pre-qualifying stages. The OSHA team cautions the use of monetary incentive awards that are linked to reductions in injury and illness rates as this may induce under-reporting.

Summary

The ORNL recordkeeping system is well-documented and in accordance with all regulations. It is a model system with the exception of oversight for the subcontractor recordkeeping. OSHA’s VPP requires the prime contractor to track the recordkeeping of the subcontractors. To meet the levels of the VPP program and the DOE requirements, Lockheed-Martin Energy Research Corporation should pick up an oversight role for their subcontractor’s recordkeeping systems and should institute an audit program that assures the subcontractor is in compliance with OSHA recordkeeping rules.

Attachment III

Medical Services

Site Visit Report: Oak Ridge National Laboratories Medical Services
8/10 - 8/14/98
Rosemary K. Sokas, MD, MOH
Office of Occupational Medicine, DTS

Overview

The Occupational Health Services Program at Oak Ridge National Laboratories (ORNL) has also undergone a staff reduction over the past three years, but it has been much more gradual and does not appear to have had the kind of impact on services as has occurred at the K-25 plant. In general, the program reflects the attention to detail and follow-up that appears to be characteristic of the overall ORNL facility. This appears to have less to do with continuity in the major contractor (Lockheed Martin) than with its historical research and development tradition, with established ties with the academic research community. In this regard the medical services required by DOE orders are much more stringent than those available in many of the offsite research facilities. There is, however, some concern that the streamlining of those orders would have the potential to reduce the services offered to the employees. In particular, the potential to use outside industry standards for services offered would be inadvisable, given the variety and severity of historical exposures, the mobility of workers between ORNL and the two production facilities, both of which have had greater exposure levels, and the uncertainty about many aspects of health outcome and the utility of screening for them. In the absence of fixed answers, it is important that protective general screening activities not be prematurely dismantled. Furthermore, staff reductions have reduced the availability of the Medical Director for routine weekly management meetings with other offices responsible for nuclear safety, radiation protection, and health and safety.

The surveillance role of the health unit should be enhanced through formal participation in safety and health meetings and committees, and through modifications of the current medical record, described below.

Current staffing totals 28 persons, down from the total of 36 persons three years ago. Personnel lost include two nurses, two laboratory technicians, and two physicians, as well as support personnel. Professional staff includes a medical director and two additional physicians, one physician assistant, four nurses, four laboratory technicians and two radiology technicians. Additional clerical, computer and support personnel work in the facility. The clinic serves the 4800 Lockheed Martin personnel as well as approximately 500 Lockheed Martin Energy Systems employees from the Y-12 facility and an additional 200-500 DOE personnel. No services are provided to subcontractors. There are approximately 25,000 visits annually, the majority of

which are walk-in clinic visits. The general medical services, including immunization, allergy shots, and other acute evaluations constitute the bulk of the services. There are 3,000 comprehensive physicals performed annually. There have been no cut-backs in services based on reduction in personnel. The facility is also undergoing preparation for an accreditation site visit from the Accreditation Association for Ambulatory Health Care.

Item 1 - Standards of practice/personnel qualifications

Protocols are in place for complying with DOE and/or OSHA requirements, and the more stringent of the two is typically utilized. Surveillance programs includes those for lead, noise, beryllium, and thallium, among others.

Personnel have an appropriate professional licensing. The program is directed by Dr. James E. Phillips, who has been a medical director for various facilities within the DOE since 1977, including the Paducah, KY site and the K-25 plant. He has been the medical director of the ORNL health division since 1994. He is board certified by the American Board of Preventive Medicine in occupational medicine and has had additional prior experience in the general practice of medicine. Staff physicians include Dr. William J. Black, who is board certified in both preventive medicines (occupational medicine) and in internal medicine; and Dr. John R. Sisk who is board certified in surgery. All three physicians have extensive clinical experience. Drs. Phillips and Black are also members of the American College of Occupational Environmental Medicine. Edmund Joseph Wise, Jr., is a certified physician assistant. He additionally holds a masters in public health in the field of occupational and environmental safety and health. He is a member of the American Academic of Physician Assistants in Occupational Medicine and has worked in the health division at ORNL since 1974. He has written and lectured in the area of occupational and environmental safety and has been an instructor for basic cardiac life support training. All professional personnel receive paid continuing education annually. This generally includes the American Occupational Health Conference meeting and additional meetings sponsored by the DOE Occupational Medicine and Medical Surveillance Division. This continuing education is targeted toward hazards such as beryllium that are of importance to DOE facilities.

Item 2 - Access to Services

On-site healthcare is provided as required by DOE orders. Physicians are on 24-hour call for back-up and emergencies and trained EMTs provide frontline emergency care. Disaster training and emergency preparedness drills are routine in the facility. A bloodborne pathogen protocol is in place for clinic personnel. The first aid responders are also covered by the offer of hepatitis B and post-exposure follow-up. Both routine surveillance and care for injuries and illnesses appeared to be readily available to personnel through overlapping shifts.

Items 3 and 8 - Job Accommodation

Supervisors at ORNL complete a physical requirement form that is reviewed by industrial hygiene and used by the Occupational Health Division for each baseline examination. In addition, all changes in job process must be described and forwarded from the supervisor to the industrial hygiene department, where sign-off by medical is also required. Changes in job requirements, including a generic listing of "chemical" without the specific chemicals listed, are routinely sent through the physician assistant who reviews the medical record to determine whether the individual is at any risk from any of the potential exposures. If additional needs for surveillance or medical evaluation are identified, the individual is rescheduled for an earlier examination. The physician assistant also provides the medical surveillance for a number of programs including the lead program. There is one location in ORNL where lead shields are produced. Approximately four years ago an incident requiring medical removal protection for lead exposure occurred, and this event prompted closer attention to exposure control. At the present time there are several individuals who have blood lead levels below the OSHA requirement for removal but above those which should be achievable with good work practices and industrial hygiene controls. The physician assistant has obtained information about video methods for more extensive industrial hygiene evaluation of these individuals in order to attempt to review work practices and sources of exposure, and will forward this information to the industrial hygienist.

Item 4 - Hazard Communication

Material safety data sheets are available in computerized form to all the health professionals in the staff. In addition, the health units subscribes to the TOMES computer database system which is updated frequently and which provides additional information on adverse health effects and on medical care. The identification of hazards as noted above include the report from supervisors on the physical demands of the work and other hazardous exposures, reported through industrial hygiene and occupational medicine. Changes in the work process that might involve additional occupational hazards prompt a similar reporting mechanism. At this facility the physicians felt that this process was indeed working well and that they were in the loop in terms of potential risk to employees. These physicians have participated in routine walk-through and hazard investigations, although during this past year these have often been pre-empted by emergency drills. The medical director does not believe that the loss of "Q clearance" has diminished the ability to participate in on-site investigations, since these occur in a team that includes individuals with the appropriate clearance. The medical director is not a formal member of the safety and health committee but does participate on an as-needed basis and acts as a consultant to assist in investigations, etc. The union environmental safety and health representative noted that this participation has been perceived as extremely helpful by the workforce and, if anything, they would like to see it occur more often.

The Occupational Health unit is involved in developing training programs, including providing information on adverse health effects as well as on specific aspects of the medical program.

Health Unit personnel are not involved in actual lectures or delivery of training, with the exception of some participation in bloodborne pathogen training.

Items 5/6/7 - Clinic Programs/Medical Surveillance/Diagnosis and Management

As noted above, the physicians and the physician assistant in the health unit participate in hazard assessment activities and are apprized of changes in workplace exposures. The staff are knowledgeable about OSHA regulations and follow the stricter of available federal regulations when there are discrepancies. The occupational health unit writes up any complaints that an employees raises concerning illness or injury that maybe related to the workplace. This information is automatically reported to the safety department, which does an evaluation to determine work-relatedness. The physicians in the unit honor outside work restrictions imposed by other physicians and will additionally require employees to have an evaluation by an on-site physician if there is any concern that the restrictions from the outside physician are not sufficiently protective, since the outside physician may not be aware of specific potential hazards and physical demands. On the other hand, the outside physician's medical opinion regarding the functional capacity of the employee is not challenged. Work restrictions are communicated to the supervisor and it is thought that over past several years much better attempts have been made at accommodating these restrictions.

The director of the health division reports to Mr. J. H. Swanks, associate director for operations, environment, safety and health, as do other safety and health offices (including nuclear safety radiation protection, and safety and health). As noted above, because of staffing reductions, Dr. Phillips does not participate in routine weekly management meetings among these division directors. Rather, he participates on an as-needed basis for problem-solving.

There appears to be no disincentive to early reporting of signs or symptoms. The OCAW health and safety representative, Mr. Jeff Hill, is notified by management any time a bargaining unit employee is injured. The employee is evaluated in the health unit, and a medical incident report is provided to the safety department. Safety evaluates the incident, and reports whether causal factors are identified, and whether these have been corrected or require future corrective action. Although the responsibility for correcting problems rests with the supervisors, the safety department maintains a tickler file to prompt follow-up until corrections have been made. The union participates with IH or safety in the investigation, and the occupational health unit is brought in as needed. As noted, the union feels that this adds credibility to investigations, particularly ones involving toxic exposures. The union also routinely surveys members to determine whether they were satisfied with the medical services they received, whether they were able to see an outside physician, if necessary, and whether bills were appropriately handled. Over 90% of employees are entirely satisfied. Problems or complaints identified are brought to the attention of the medical director and are rapidly resolved.

Communication between the health unit and the safety department appears to be good. Although aggregate medical surveillance data is not generated by the health unit, sentinel event feedback is

given. For example, if an employee is found to have a standard threshold shift on audiometric examination, written reports are sent to the employee, to the supervisor, and to the safety department. Because most employees receive audiometric evaluation, such reports generate noise measurement in areas not already identified in hearing conservation programs.

Medical information is routinely reported to the employee. Medical records are kept strictly confidential and all privacy act requirements are followed. Partial record computerization, including laboratory results, has been achieved using an Oracle-based system that is user-friendly. Future plans include computerizing the physical requirements form and the medical restrictions form to serve as a double check. The computer system is stand-alone and not accessible to anyone outside the building. Because of record safety issues, a fire-safe, climate controlled vault has been constructed for safe storage of records. This vault is located on the same floor and in close proximity to the clinical care area. The current charts are thinned to include only the most immediately relevant information. Because of the record computerization, however, printouts are available for results from the four previous exams when an individual is seen for surveillance purposes, allowing appropriate longitudinal evaluation. On the other hand, the form outlining the physical demands of the job is most often stored in the archived records. Until full computerization is achieved, this paper version should remain in the active record.

Although aggregate surveillance is not formally done, all clinicians noted trends in the animal care houses, describing ergonomic stressors and the need for improved handling facilities (which apparently has not occurred because of cost).

The clinicians also provided numerous examples of individuals who had non-work-related medical problems discovered as a direct result of the screening process at stages where effective treatment was available and implemented. The unit maintains information demonstrating cost-effectiveness. Both clinicians and employees appear to value the health promotion and screening services provided by the unit.

As noted above, accommodation is provided as needed. Job changes are also voluntarily provided for pregnant employees, along with risk counseling.

Item 9- Recordkeeping.

As reported elsewhere, recordkeeping appears to be performed accurately and consistently. Of particular importance is the role of the record-keeper in the safety department in maintaining a tickler file that encourages continued follow-up until safety recommendations have been implemented.

Item 10- Program review

As noted above, the clinic is preparing for an AAAHC investigation that will focus on quality of care aspects. These appear to have been a priority for the health unit, and quality assurance

includes all aspects of clinical, laboratory and radiological services. While there is overall integration of the health unit into health and safety at ORNL, improvements in formal feedback mechanisms and in the documentation of both exposures and follow-up safety interventions in the current medical records would be useful. This could be accomplished by incorporating specific chemical exposure information into the physical demands form (or by creating an additional form); by maintaining the exposure information in the current record; and by requesting follow-up information (and filing such information in the medical record) concerning implementation of safety recommendations, as found on the back of the MIR.